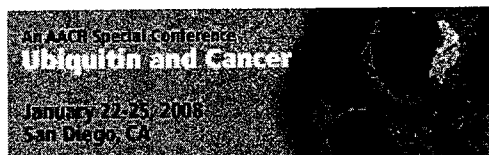


Cancer Research



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Specificity and Affinity of Monoclonal Antibodies against Carcinoembryonic Antigen¹

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The binding specificities of 52 well-characterized monoclonal antibodies (Mabs) against carcinoembryonic antigen (CEA) from 12 different research groups were studied by immunohistochemistry and immuno flow cytometry. In addition, the binding constant for the interaction between Mab and CEA was determined by a solution-phase assay. Cryostat sections of colon carcinoma and normal colon, stomach, liver, pancreas, and spleen were studied by immunohistochemistry. Peripheral blood granulocytes, monocytes, and lymphocytes were assayed by immuno flow cytometry. The Mabs used here have previously been classified into five essentially nonoverlapping epitope groups (GOLD 1-5) (*Cancer Res.*, 49: 4852-4858, 1989).

Most Mabs cross-reacted with different normal tissues, ranging from highly cross-reactive Mabs (positive reaction with 8 of 9 discriminating tissues) to relatively specific Mabs (positive reaction with 1 of 9 discriminating tissues). Five Mabs (10%) were specific, reacting only with colon carcinoma, normal colon mucosa, and normal gastric foveola. There was a correlation between epitope group and binding specificity.

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Mabs with a high degree of CEA specificity almost exclusively belonged to epitope groups 1, 2, and 3, while highly cross-reactive Mabs belonged to epitope groups 4 and 5. There was no correlation between antibody specificity and affinity for CEA. Specific Mabs with high as well as low affinity were found.

¹ This study represents the work of an international workshop on the specificity and binding properties of monoclonal antibodies against carcinoembryonic antigen.

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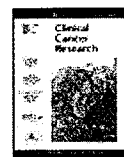
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